Infrared Digital Scouting Camera

User's Manual

Scouting Camera SG560P-8M

Content

1 Instruction 1
1.1 General Description 1
1.2 Application 1
1.3 Camera Interface 2
1.4 Saving Images or Videos 5
2 Cautions 6
3 Easy Operations 7
3.1 Power Supply 7
3.2 Insert the SD-card 7
3.3 Power on and Entering into the ON Mode 7
3.4 Enter into the TEST Mode 8
3.4.1 Preview 8
3.4.2 Customer Settings 8
3.4.3 Manual Capturing 9
3.4.4 View Images or Videos 9
3.4.5 Delete Images or Videos 9
3.6 Power Off 10
4 Advanced Operations 11
4.1 Settings Menu 11
4.1.1 Set Camera Mode 11
4.1.2 Format SD-Card 12
4.1.3 Set Photo Size 12
4.1.4 Set Video Size 12
4.1.5 Set Date and Time 13
4.1.6 Set Photo Burst 14
4.1.7 Set Video Length 14
4.1.8 Set PIR Sensitivity 15
4.1.9 Set PIR Triggering Interval 15
4.1.10 Set Timer Triggering Interval 16
4.1.11 Set Timer Switch 17

4.1.12Set Flash Range 18
4.1.13Set Time Stamp 18
4.1.14Reset to Default Settings 19
4.2 Default Settings and Live Monitoring 19
4.3 Firmware upgrade 20
5 Mounting the Camera 21
Appendix I: PIR Detection Zone 22
Appendix Ⅱ: Technical Specifications 24
AppendixⅢ: Parts List 25

1 Instruction

1.1 General Description

This camera is a surveillance device working automatically.

It can be triggered by any movement of human (or animals) in a certain region of interested (ROI) monitored by a highly sensitive Passive Infra-Red motion sensor (PIR)，and then take high quality pictures (up to 8 mega pixels) or video clips.

It also can be triggered by timer which means the camera can capture pictures or video clips at specified time intervals regardless of whether there is a motion of human or animals.

The device is equipped with built-in infrared 940nm LEDs, it takes clear pictures or videos (in B&W) even in the dark night, while it takes color pictures or videos under sufficient daylight.

The camera consumes very little power(μA level) at surveillance mode. Powered by Eight new AA alkaline batteries, the camera stands-by for months. Once a motion by human or animals is detected, the digital camera unit will be awoken up at once and then automatically take pictures or videos according to previously programmed settings.

The device is designed for outdoor use and is resistant against water and snow. Furthermore, the camera can be used as a portable digital camera. Pictures or videos can be taken manually by pressing on the operation panel.

1.2 Application

This camera can be used as automatic surveillance device for

guarding and recording unexpected intrusion to homes, shops, schools, depots, offices, taxies, worksites etc. It can also be used as trail camera for hunting or monitoring animals by recording the traces of wild animals. It can be left alone for weeks and months and it will save event records automatically in digital format.

1.3 Camera Interface

1.3.1 Camera Body Interface

The camera has the following interfaces: a 2.0" TFT LCD display screen, operation panel, USB connector, SD card slot and external DC power connector. Fig.1 shows the front view of the camera and its functional parts. Fig.2 shows the operation panel and display screen. Fig.3 shows the bottom view of the camera and its I/O interface.

Take a few moments to familiarize with the camera controls and displays. It is helpful to bookmark this section and refer to it when reading through the rest of the manual.

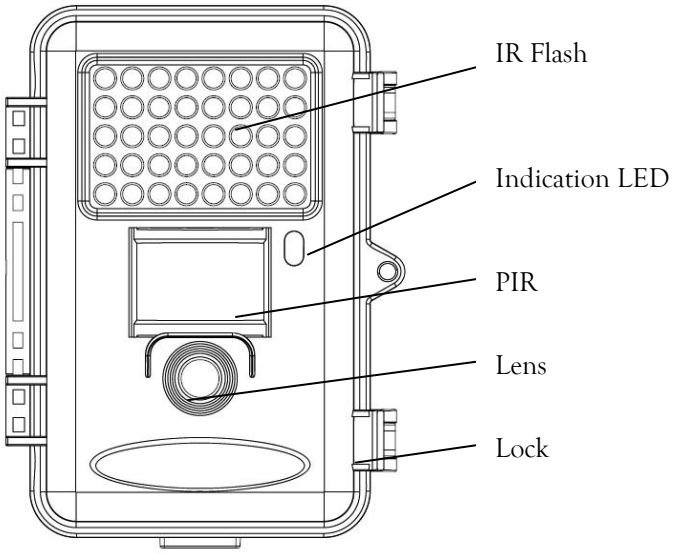


Figure 1: Front view

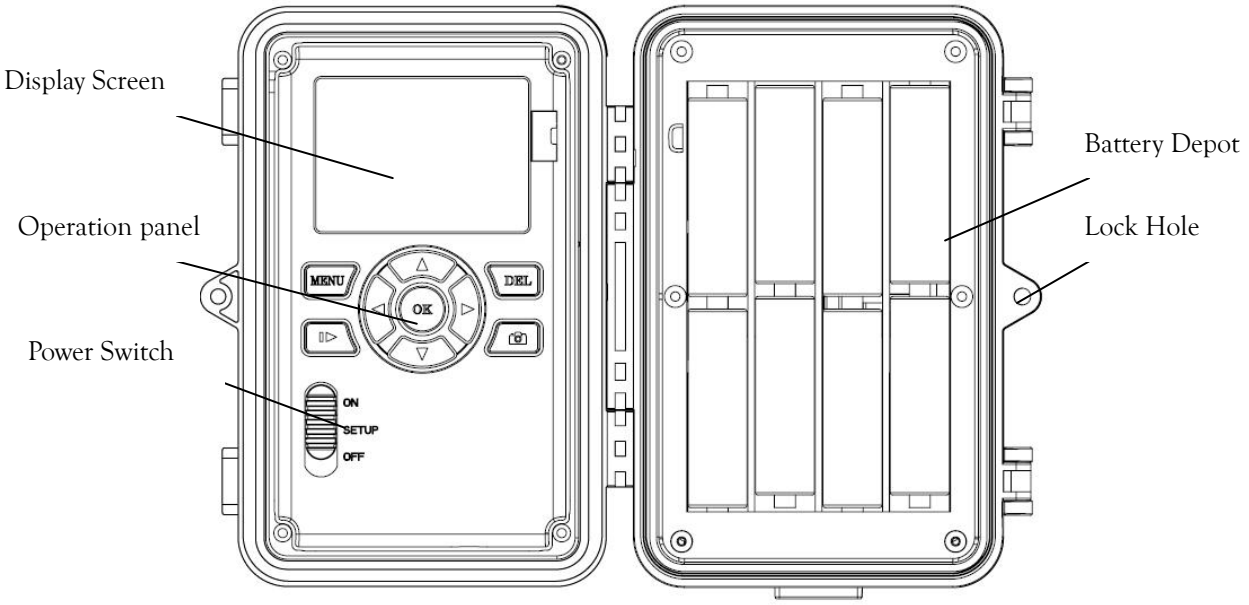


Figure 2: Operation interface

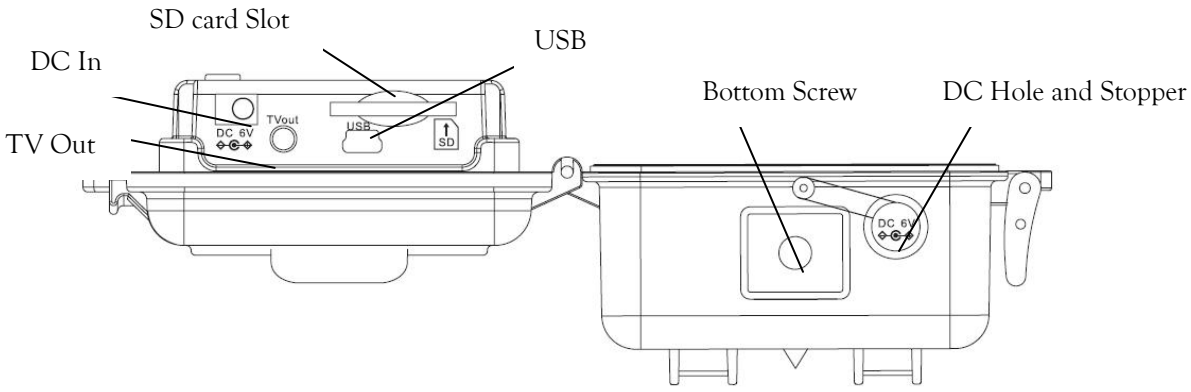


Figure 3: Bottom view

1.3.2 Key Notes

"**MENU**": to enter the program menu in preview mode;

"▲""▼""◀""▶": for parameter settings as described in the user's manual.

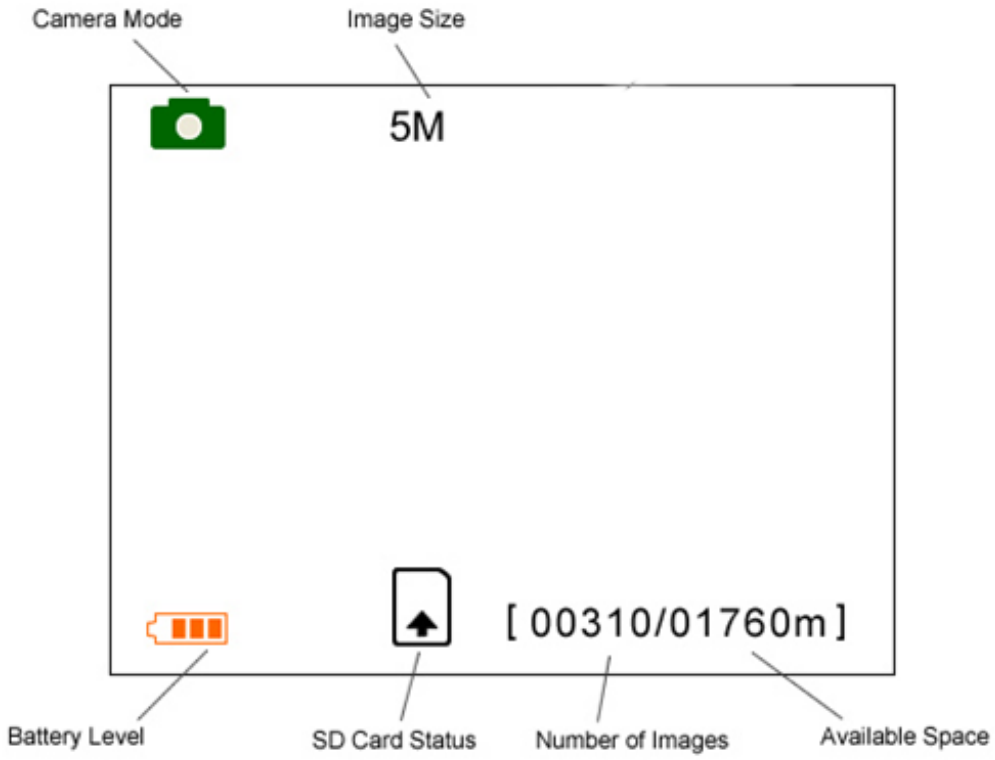
"**OK**": to save parameter settings and play videos.

"": to exchange between playback mode and preview mode;

"**DEL**": to delete an image

"": to capture a photo or record a video manually.

1.3.3 Shooting Information Display



1.4 Saving Images or Videos

The Camera uses a SD card to save images (in .jpg format) and videos (in .avi format). Before inserting the SD card be sure that the SD card is unlocked. The camera is compatible with SD card from 8MB to 32GB.

2 Cautions

★ The working voltage of the camera is 6V. The camera is supplied by four AA batteries.

★ Please install batteries according to shown polarity.

★ Please unlock the write-protect before inserting the SD card.

★ Please insert the SD card when the power switch is at **OFF** position before testing the camera. The camera has no internal memory for saving images or videos. If no SD card is inserted, the camera will shut down automatically after a continuous indication sound.

★ Please do not insert or take out the SD card when the power switch is at **ON** position.

★ It is recommended to format the SD card by the camera when used at the first time.

★ In the **TEST** mode, the camera will shut down automatically after 3 minutes if no operation is done. Please turn on the power again if you want to continue to work with the control.

3 Easy Operations

3.1 Power Supply

Use 8 or 4 AA batteries or 6v external battery for power supply.

Install the fully charged batteries into the depot according the polarities sign shown. The following batteries with 1.5V output can be used:

1. High-density and high-performance alkaline batteries (Recommended)
2. Rechargeable alkaline batteries
3. Rechargeable NiMH batteries

When in low-battery state, camera will be automatically shut down after the indication LED flashing for a while. Please change the batteries in time.

3.2 Insert the SD card

The camera has no internal memory for saving images or videos. If no SD card is inserted or SD card is locked, the camera will shut down automatically after a continuous indication sound.

3.3 Power on and Entering into the ON Mode

The Camera has three basic operation modes:

1. **OFF mode**: to turn off the camera.
2. **TEST mode**: to set operational parameters, or to playback the photos or video clips via display screen or via TV.
3. **ON mode**: to work under surveillance state.

After switching the camera to ON position, the motion

indication LED (red) will blink for about 10s. This time interval is for you to make the Camera ready for automatic surveillance operation, e.g., to close the bottom cover and to lock it, to fix the camera on a tree and to walk away. After entering into the ON mode, no manual controls are needed and possible. The Camera will take pictures or videos automatically according to the previous programmed settings, when human or animals enter into the monitoring region.

3.4 Enter into the TEST Mode

There are 3 states in TEST Mode: preview state (preview the scene in the front of the camera), setting state (make customer settings), and playback state (view Photos or videos via 2.0" TFT display).

3.4.1 Preview

After switching the camera to TEST Mode, it enters into the preview state.

Press to exchange between playback mode and preview mode;

3.4.2 Customer Settings

Press **MENU** to manually customizing the camera settings which displayed on the screen. The detailed operations will be described in "Advanced Operations" chapter.

3.4.3 Manual Capturing

Press to manually capture photos or record videos. Press again to stop the manual capturing of a video.

3.4.4 View Images or Videos

Press to view images or videos, the latest image or video will be shown in the LCD screen. Press "▲" or "▼" to view the previous or next image or video.

3.4.5 Delete Images or Videos

Press **DEL** to delete images or videos .Note the **DEL** button just works in Playback state. So if it's in Preview state, you should press to enter into Playback state first.

3.5 Triggering modes

There are 3 triggering modes of the camera: PIR triggering, Timer triggering and PIR& Timer triggering.

3.5.1 PIR Triggering

PIR triggering is the default setting. The camera works only when motions get detected, while, if PIR sensitivity is set as **PIR OFF**, the camera stops PIR triggering.

3.5.2 Timer triggering

The **Timer interval** Default setting is **OFF** which means the timer triggering is disabled. While changing the timer triggering interval to a non-zero value, the camera starts to work at a preset interval. Users need to OFF the PIR triggering (choose **PIR**

sensitivity as **PIR OFF**) if want the camera work only via Timer triggering.

3.5.3 PIR& Timer triggering

If want both PIR triggering and Timer triggering, the user needs go to **PIR sensitivity** to set **"normal, high or low"** sensitivities according to the external environments, and need to set the **Timer interval** to a desired non-zero value. The camera will capture pictures or videos in a preset time interval even there is no motions get detected; the camera will also capture pictures and videos if motions get detected.

3.6 Power Off

Switch the camera to **OFF** position to power off the camera. Please note that even in the **OFF** mode, the camera still consumes certain power at μA level. Therefore, please remove the battery if the camera will not be used for a long time.

4 Advanced Operations

After you're familiar with the basic operations of the Camera, you are now ready for advanced operations，and the options and parameters of the Camera are explained in more detail.

4.1 Settings Menu

To view the camera settings menu, press **MENU** in the **TEST** mode (Power switch is at **TEST** position). The settings menu will be shown on the LCD on the camera or the external TV monitor (only when the camera is connected to a TV).

4.1.1 Set Camera Mode

There are two modes: Photo or Video. There are two ways to set the camera mode: 1. Via shortcut key; 2. Via setting menu.

1. Via shortcut key: You can set mode to "video" by pressing "▲" key and set mode to "Photo" by pressing "▼"key in TEST mode.

2. Setting menu: The following shows how to set camera mode to **Video**, provided that the previous option is **Photo**:

a) Press **MENU** to display the setting menu.

b) Press "▲" or **"▼ "** to select **Camera Mode**.

c) Press **"► "** to select **Video**.

d) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to cancel setting and return to info display.

4.1.2 Format SD Card

The system will delete all images and videos stored in the SD card after formatting, make sure that you have made a backup of important data.

a) Press **MENU** to display the setting menu.

b) Press "▲ " or "▼ " to select **Format**.

c) Press **OK** to choose **Enter** to enter into submenu.

d) Press "► " to select **Yes**. **Yes** will be highlighted.

e) Press **OK** to start formatting the SD card. Press **MENU** to return to info display.

4.1.3 Set Photo Size

This parameter has two values: 5 mega pixels (5M Pixel or 5MP) and 8 mega pixels (8M Pixel or8MP). The default value is 5 mega pixels.

The following shows you how to set pixel size as "8M Pixel" provided that the previous value is "5M Pixel" at MENU state:

a) Press **MENU** to display the setting menu.

b) Press "▲ " or "▼ " to select **Photo Size**.

c) Press "► " to select **8MP**.

d) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to return to info display.

4.1.4 Set Video Size

This parameter also has two values: VGA (640×480）and QVGA (320×240）. The default value is “640x480” (VGA).

The following shows how to set video size as **320×240** provided that the previous option is **640×480**:

e) Press **MENU** to display the setting menu.

f) Press “▲” or “▼” to select **Video Size**.

g) Press “►” to select **320×240**.

h) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to return to info display.

4.1.5 Set Date and Time

You can change the date and time of the device by setting this parameter when necessary, e.g., after every battery change. The date format is **month/day/year**, the time format is **hour**: **minute**: **second**. The valid value for year is between 2009 and 2050.

Provided that the date and time are needed to be set to November 15th, 2010 and half past ten, the steps are as following:

a) Press **MENU** to display the setting menu.

b) Press “▲” or “▼” to select **Set Clock**.

c) Press **OK** to **enter** into submenu.

d) Press “►” to select item, press “▲” or “▼” to change the value.

e) Press **OK** to save all current setting and return to info display.

Press **MENU** to return to info display.

4.1.6 Set Photo Burst

This parameter affects the number of pictures taken for each triggering in **Photo** mode. It has three values: “1 Photo” “2 Photos” and “3 Photos”. Its default value is “1 Photo”.

The following shows how to set continuous capture number to **3 Photos** provided that the previous option is **1 Photo**:

a) Press **MENU** to display the setting menu.

b) Press “▲ ” or “▼ ” to select **Photo Burst**.

c) Press “► ” to select **3 Photos**.

d) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to return to info display.

4.1.7 Set Video Length

This parameter is effective and can be adjusted only when the device in the video mode for the LIVE mode. Its value extends from 1 to 60 seconds with a step of one second. The default value is 10 seconds. Press “◂” and “► ” to decrease or increase the value by 1 second.

The following shows how to set video length to **15 Seconds** provided that the previous value is **1 Second**:

a) Press **MENU** to display the setting menu.

b) Press “▲ ” or “▼ ” to select **Video Length**.

c) Press “► ” to increase to **15 Seconds**.

d) Press **OK** to save the current setting and the option will be

un-highlighted.

Press **MENU** to exit.

4.1.8 Set PIR Sensitivity

This parameter defines the sensitivity of the PIR. There are four parameters: **High, Normal, Low** and **off.** The default value is "Normal". The higher degree indicates that the Camera is more easily to be triggered by motion, taking more pictures or recording more videos. It is recommended to use high sensitivity degree in room or environment with little interference, and to use lower sensitivity for outdoor or environment with lots of interference like hot wind, smoke, near window etc. Furthermore, the sensitivity of the PIR is strongly related to the temperature. Higher temperature leads to lower sensitivity. Therefore it is suggested to set a higher sensitivity for high temperature environment.

The following shows how to set PIR sensitivity as **Low** provided that the previous option is **Normal**.

a) Press **MENU** to display the setting menu.

b) Press "▲" or "▼" to select **PIR Sensitivity**.

c) Press "►" to select **Low**.

d) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to return to info display.

4.1.9 Set PIR Triggering Interval

This parameter means that how long the PIR (Passive Infrared motion sensor) will be disabled after each triggering in ON mode.

During this time the PIR of the device will not react to the motion of human (or animals). The minimum interval is 0 second, it means the PIR works all the time. The maximum interval is 60 Min, it means the PIR will be disabled for 1 hour after each triggering. The default value is 1 minute. Press "◄""►" to decrease or increase the value.

The following shows how to set triggering interval time to **5 Minutes** provided that the previous value is **1 Minute**.

a) Press **MENU** to display the setting menu.
b) Press "▲" or "▼" to select **PIR Interval**.
c) Press "►" to decrease or increase to **5 Minutes**.
d) Press **OK** to save the current setting and the option will be un-highlighted.
Press **MENU** to cancel setting and return to info display.

4.1.10 Set Timer Triggering Interval

This camera has a new function, timer function，which means the camera captures images or videos at a preset time intervals regardless of whether there are motions get detected. The default parameter is **OFF** which means the timer function is disabled. When changing this parameter to a non-zero value, it starts to take photos at given time interval. The value ranges from 10 seconds to 8 hours. Press "◂" and "►" to decrease or increase the value.

The following shows how to set timer interval to **1 hour** provided that the previous value is **OFF**.

e) Press **MENU** to display the setting menu.

f) Press "▲" or "▼" to select **Timer Interval**.

g) Press "►" to decrease or increase to **1 hour**.

h) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to cancel setting and return to info display.

4.1.11 Set Timer Switch

This parameter defines a certain time lapse in a day when the camera can be triggered, while in the rest of the time lapse the device is shut off. The effective value ranges from 00:00 to 23:59.

Timer Switch OFF means the camera works all along; Timer switch ON means the camera works only during the time lapse according to the preset settings.

Please note that the Timer switch functions only when the timer is set as **On**. Provided that the camera works from 08:00 a.m. to 17:00 p.m., the steps are as following:

a) Press **MENU** to display the setting menu.

b) Press "▲" or "▼" to select **Timer Switch**.

c) Press "►" to select **On**.

d) Press **OK** to enter into submenu.

e) Press "►" to select item, press "▲" or "▼" to change the value until the start time changes to 8 and the stop time changes to 17.

f) Press **OK** to save all current setting and the option will be un-highlighted.

Press **MENU** to return to previous menu.

4.1.12 Set Flash Range

This parameter defines the IR lights distance. The camera provides two options **15m** and **8m**. If choose 15m, all these 40 IR lights work to get a long IR distance, while if choose 8m, the IR range will be shorter, and only the 3 middle horizontal arrays of IR lights work, to save the power consumption.

The following shows how to set flash range as **8m** provided that the previous option is **15m**.

a) Press **MENU** to display the setting menu.

b) Press "▲" or "▼" to select **Flash Range**.

c) Press "►" to select **8m**.

d) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to cancel setting and return to info display.

4.1.13 Set Time Stamp

This parameter defines whether the date and time be stamped in the pictures or not. The following shows you how to set time stamp as "Off" provided that the previous value is "On" in MENU state.

e) Press **MENU** to display the setting menu.

f) Press "▲" or "▼" to select **Time Stamp**.

g) Press "►" to select **Off**.

h) Press **OK** to save the current setting and the option will be un-highlighted.

Press **MENU** to cancel setting and return to info display.

4.1.14 Reset to Default Settings

To reset the setting to the default values, the steps are as follows:

a) Press **MENU** to display the setting menu.

b) Press "▲" or "▼" to select **Default Set.**

c) Press **OK** to reset to default settings and return to info display.

Press **MENU** to cancel setting and return to info display.

4.2 Default Settings and Live Monitoring

Please refer to table 1 for the default settings:

Parameter name	Default	Other settings
Camera Mode	Photo	Video
Photo Size	5M Pixel	8M Pixel
Photo Burst	1 Photo	2 Photos, 3 Photos
Video Size	640×480	320x240
Video Length	Avi 10 Second	1-60 seconds
PIR Sensitivity	Normal	High, Low,Off
PIR Interval	1 Minute	0-59 seconds, 1-60 minutes
Timer Interval	OFF	10 seconds to 8 hours
Timer Switch	Off	On (00:00 – 23:59)
Flash Range	15M	8M

Time Stamp	On	Off

Table 1: Default settings of the Camera

4.3 Firmware upgrade

This camera provides an upgrading function for the users. Upgrading is needed only when an improved firmware is available.

5 Mounting the Camera

When use the camera in outdoor environment, such as hunting or monitoring the living habits of wild animals, you need to mount the device on a certain place properly. It is recommended to mount the camera on a tree with diameter about 15cm. To get the optimal picture quality, the recommended distance is 5m from the tree to the target monitoring area and recommended height from the ground is 1.5~2 meters. Adjust the viewing angel properly (view angle of this camera is 52°).

There are two ways to mount the camera: using a band shaped belt, bottom screw.

Using the belt: To use the belt to fix the camera on a tree is illustrated in Fig. 4. Take the belt toes to go through the two back holes of the camera. At the end, tie the two toes to the tree to finish fixing.

Using bottom screw.

Figure 4: Fixing the camera with belt

Appendix I: PIR Detection Zone

The figure5 shows the detection range in different detection angle. When the detection angle is 35°,the detection range is 50ft. When the detection angle is 52°,the detection range is 30ft.

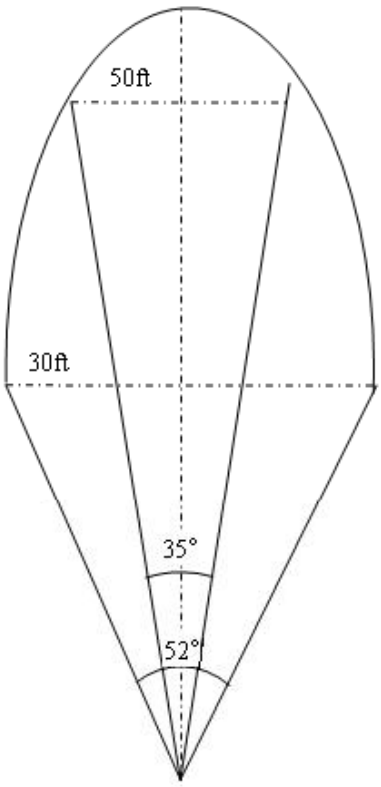


Figure 5

The PIR detection angle (α) is just barely larger than the field of view angle(β). The advantage of this design is to avoid empty pictures and get available pictures.

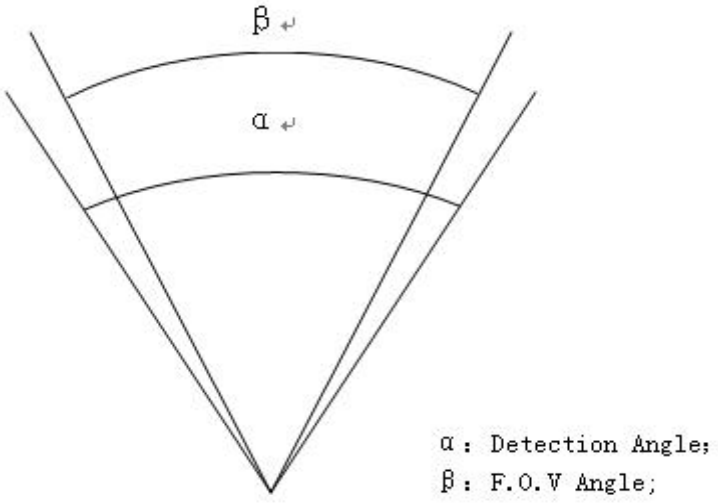


Figure6

This camera has a new design of PIR and this new PIR is patented. The new patented PIR's detection range can reach to 22m. The figure 7 shows the compared detection zone between normal PIR and the new patented PIR.

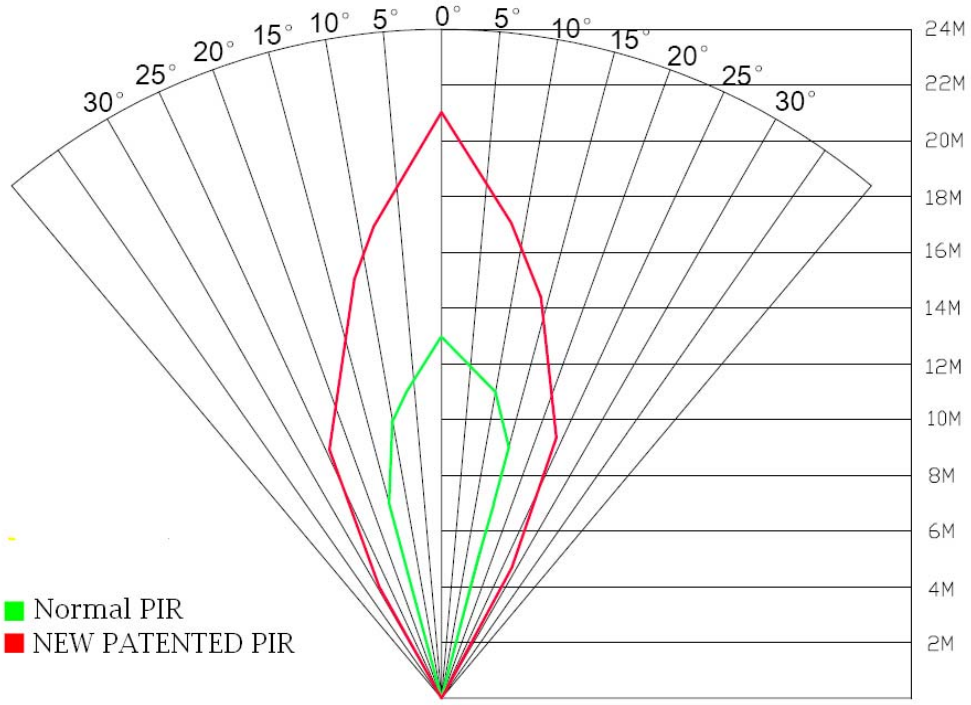


Figure 7

Appendix Ⅱ : Technical Specifications

Image Sensor	5MP Color CMOS, 8MP interpolation
Lens	F/NO=3.1 FOV(Field of View)=52°
IR-Flash	Up to 22M/73F(940nm IR LEDs)
Detection Range	Up to 22M/73F
Display Screen	2.0" TFT
Memory Card	Up to 32GB
Picture Resolution	8MP = 3264 ×2448 5MP = 2560×1920
Video Resolution	640×480 (16fps) 320×240 (20fps)
PIR Sensor	Multi Zone
PIR Sensitivity	Adjustable (High/Normal/Low)
Trigger Time	1s
Weight *	0.24 kg
Operation/Storage Tem.	-20 - +60°C / -30 - +70°C
Interval	0s – 60 min.
Photo Burst	1–3
Video Length	1–60s
Power Supply	8× AA (recommend),4× AA(urgent)
Stand-by Current	< 0.3 mA (<7mAh/Day)
Low Battery Alert	LED Indicator
Display Screen	LCD display
Mounting	Rope/Belt/Python lock
Dimensions**	140x 80x 50 mm
Operation Humidity	5% - 90%
Security authentication	FCC, CE, RoHS

*without battery

AppendixIII: Parts List

Part Name	Quantity
Digital Camera	One
TV Cable	One
USB Cable	One
Belt	One
User Manual	One
Warranty Card	One